CHEMICAL VAPOR GROWTH METHOD

CHEMICAL VAPOR GROWTH METHOD

Patent Number:

JP4162418

Publication date:

1992-06-05

Inventor(s):

SAKUMA YOSHIKI

Applicant(s):

FUJITSU LTD

Requested Patent:

JP4162418

Application Number: JP19900286469 19901024

Priority Number(s):

IPC Classification:

H01L21/205

EC Classification:

EC Classification:

Equivalents:

Abstract

PURPOSE: To form a uniform layer controlled in an atomic layer order easily on a substrate having a large area by setting at least one kind of concentration of a raw material gas within a range, in which the rate of change of a growth rate in the relationship of the growth rate of the layer to one kind of raw- material gas concentration is not increased substantially, and supplying the raw material gas.

CONSTITUTION: The inside of a reaction tube 1 is exhausted by a rotary pump 42. A turbomolecular pump 3 and a rotary pump 41 exhaust a load locking mechanism for sending a substrate crystal 2 into or out from the inside of the reaction tube 1. A numeral 6 represents a heater for heating the substrate crystal 2. A manifold 7 is connected at one end of the reaction tube 1, and flow-path changeover valves S1, S2, S3 are bonded with each branch section. A growth rate increases in approximately proportional to TEG concentration within a range, in which the concentration of TEG is low, the growth rate is not proportional to TEG concentration within a range, in which TEG concentration is higher, and the growth rate is kept approximately constant when TEG concentration exceeds 20X10<-4> in terms of molar fraction.